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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,354	07/14/2005	Mitsuru Naito	OGW-0375	2703

7590 09/18/2007

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EXAMINER	
KOTTER, KIP T	
ART UNIT	PAPER NUMBER
3617	
MAIL DATE	DELIVERY MODE
09/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,354	NAITO ET AL.	
	Examiner	Art Unit	
	Kip Kotter	3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 14 July 2005 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 14 July 2005.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **7A** and **7B**.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "**6**" and "**7**" have both been used to designate leg portions as described in paragraphs [0025] and [0028].

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. **No new matter should be entered.**

Specification

3. It appears that the specification is a direct translation from a foreign document. As such, a substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and

(b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

Examples of some unclear, inexact or verbose terms used in the specification are:

- In line 1 of paragraph [0003], the phrase "As one of noises by pneumatic tires".
- In lines 5 and 6 of paragraph [0004], the phrase "the operator inserts his hands into the cavity though a narrow space..."
- In lines 3 and 4 of paragraph [0043], the term "Helmholm resonance absorber".

Claim Objections

4. Claims 5 and 16 are objected to because of the following informality: it appears that the term "jointing" should be changed to – **joining** –. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-4 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glinz et al. (U.S. Patent No. 6463976 B1) in view of Akiyoshi et al. (U.S. Patent No. 6648421 B1).

Regarding claims 1, 3, 4, 12, 14 and 15, Glinz et al. discloses a tire/wheel assembly comprising: a wheel **1** having a rim **15**; a pneumatic tire mounted on the rim of the wheel, the pneumatic tire having a cavity as shown in Fig. 3; and a noise reduction interior member **2** disposed in the cavity of the pneumatic tire, the noise reduction interior member having left and right elastic rings **4**, **5** fitted to the rim and an annular body **3** attached between the elastic rings.

Glinz et al., however, fails to expressly disclose the annular body having a cross-sectional shape that varies in the tire circumferential direction such that an annular cavity portion surrounded by the noise reduction interior member and the pneumatic tire has a cross-section area that varies periodically in a circumferential direction of the tire.

Akiyoshi et al. teaches a tire/wheel assembly wherein the annular body **30** has a cross-sectional shape that varies in the tire circumferential direction such that the annular cavity portion (unlabeled) surrounded by the noise reduction interior member and the pneumatic tire has a cross-section area that varies periodically in a circumferential direction of the tire as shown in Fig. 6 and described in column 4, lines 54-65.

It would have been obvious to a person having ordinary skill in the art to have modified the annular band of Glinz et al. so that it has a cross-sectional shape that varies in the tire circumferential direction so that the annular cavity portion has a cross-section area that varies periodically in a circumferential direction of the tire, such as taught by Akiyoshi et al., to reduce noise caused by columnar resonance.

Regarding claims 2 and 13, Akiyoshi et al. teaches a tire/wheel assembly wherein the cross-sectional area of the annular cavity portion varies such that the maximum cross-sectional

area is 2% greater or more than a minimum cross-sectional area thereof as described in column 6, lines 13-26.

From this teaching, it would have been obvious to a person having ordinary skill in the art to have modified Glinz et al. so that the cross-sectional area of the annular cavity portion varies such that the maximum cross-sectional area is 2% greater or more than a minimum cross-sectional area thereof to obtain a larger noise reducing effect.

7. Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glinz et al., in view of Akiyoshi et al., as applied to claims 1 and 12 above, and further in view of Osada et al. (U.S. Patent No. 4216810).

Glinz et al., as modified by Akiyoshi et al., fails to disclose the annular body being formed by a plurality of annular body pieces into which the annular body is divided in a circumferential direction thereof.

Osada et al. teaches a tire/wheel assembly wherein the annular body **Fp** is comprised of a plurality of annular body pieces **14** in a circumferential direction as shown in Fig. 2.

It would have been obvious to a person having ordinary skill in the art to have substituted an annular body made of a plurality of annular body pieces, such as taught by Osada et al., for the non-closed slot ring annular body of Glinz et al, as an alternative and equivalent annular body arrangement for facilitating its assembly.

8. Claims 6-7, 10-11, 17-18 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glinz et al. in view of Flament et al. (U.S. Patent No. 6516849 B2).

Regarding claims 6, 10, 17 and 21, Glinz et al. discloses a tire/wheel assembly comprising: a wheel **1** having a rim **15**; a pneumatic tire mounted on the rim of the wheel, the pneumatic tire having a cavity; and a noise reduction interior member **2** disposed in the cavity of the pneumatic tire in such a manner that the noise reduction interior member divides the cavity of the pneumatic tire into an inner cavity part and an outer cavity part as shown in Fig. 1, and the noise reduction interior member having left and right elastic rings **4**, **5** fitted to the rim and an annular body attached between the elastic rings.

Glinz et al., however, fails to expressly disclose the annular body having a plurality of openings through which the inner cavity part and outer cavity part are communicatingly connected, the annular body having regions equally sectioned in a circumferential direction thereof, the plurality of openings being unevenly distributed in such a manner that the regions have openings which are different in total opening area and wherein the openings have opening lengths of 3 mm to 6 mm.

Flament et al. teaches a tire/wheel assembly wherein the annular body has a plurality of openings **15** through which the inner cavity part and outer cavity part are communicatingly connected, the annular body having regions **11** equally sectioned in a circumferential direction thereof, the plurality of openings being unevenly distributed in such a manner that the regions have openings which are different in total opening area as shown in Fig. 8-b and openings with opening lengths of 3 mm to 6 mm as described in column 5, lines 9-11.

It would have been obvious to a person having ordinary skill in the art to have modified the annular body of Glinz et al. so that it includes equally sectioned regions and a plurality of openings, wherein the openings have lengths of 3 mm to 6 mm and are unevenly distributed so

that the regions have openings which are different in total opening area, such as taught by Flament et al, to provide Helmholtz-type resonators for attenuating different frequencies of resonances.

Regarding claims 7 and 18, it would have been obvious to a person having ordinary skill in the art, as a mechanical expedient, to have modified the regions so that the region having openings that are maximum be 5% to 10% greater in total opening area than the region having openings that are minimum to optimize the effectiveness of the Helmholtz-type resonators in dissipating vibrational energy.

Regarding claims 11 and 22, it would have been obvious to a person having ordinary skill in the art, as a mechanical expedient, to have modified the annular body so that the entire opening area of all the openings on the outer surface is between 0.3% to 6.0% of the total outer surface area of the annular body to optimize the effectiveness of the Helmholtz-type resonators in dissipating vibrational energy.

9. Claims 8-9 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glinz et al. in view of Flament et al., as applied to claims 6 and 17 above, and further in view of Osada et al.

Glinz et al., as modified by Flament et al., fails to disclose an annular body that consists of four equally sectioned regions, wherein the regions having maximum total opening area alternate with the regions having minimum total opening area.

Osada et al. teaches a tire/wheel assembly wherein the annular body **Fp** is comprised of four equally sectioned regions **14** in a circumferential direction as shown in Fig. 2.

It would have been obvious to a person having ordinary skill in the art to have substituted an annular body made of four equally sectioned regions such as taught by Osada et al., for the non-closed slot ring annular body of Glinz et al, as modified by Flament et al., as an alternative and equivalent annular body arrangement for facilitating its assembly.

Further, it would have been obvious to a person having ordinary skill in the art to have alternately placed the regions having maximum total opening area and the regions having minimum total opening area to optimize the effectiveness of the Helmholtz-type resonators in dissipating vibrational energy.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references show other noise reduction members disposed in the cavity of pneumatic tires.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kip Kotter whose telephone number is (571) 272-7953. The examiner can normally be reached on 9:00-4:00pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samuel J. Morano can be reached on (571) 272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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RUSSELL D. STORMER
PRIMARY EXAMINER 12/07